

**DISTRIBUTION OF THE WESTERN CONIFER SEED BUG,  
*LEPTOGLOSSUS OCCIDENTALIS* HEIDEMANN  
(HETEROPTERA: COREIDAE) IN CONNECTICUT AND  
PARASITISM BY A TACHINID FLY,  
*TRICHOPODA PENNIPES* (F.) (DIPTERA: TACHINIDAE)**

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*Abstract.*—The western conifer seed bug, *Leptoglossus occidentalis* Heidemann, was first collected in Connecticut on December 27, 1985 in Fairfield County. Subsequently, it dispersed throughout the state with further geographic expansion into Massachusetts, Rhode Island, New Hampshire and Maine. In 1997, five adults of *L. occidentalis* were found parasitized by *Trichopoda pennipes* (F.) (Tachinidae). Adults of *L. occidentalis* invade homes to overwinter and, thus, are mainly considered a nuisance species.

*Key Words:* forest pest, Connecticut, *Leptoglossus occidentalis*, *Trichopoda pennipes*, Diptera, Tachinidae, Heteroptera, Coreidae, biological control

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The western conifer seed bug, *Leptoglossus occidentalis* Heidemann, is a household nuisance in New England. I observed that they can tolerate freezing temperatures but are unable to survive if exposed to wet conditions in combination with cold. In the wild, *L. occidentalis* seeks shelter under dry bark or in rodent or bird nests. Because buildings offer the same protection, they frequently enter homes and commercial facilities in late fall and early winter (Wheeler 1992).

Connelly and Schowalter (1991) consider *L. occidentalis* to be a forest pest. It feeds on over 30 known species of trees, primarily *Abies*, *Picea*, *Pinus* and *Tsuga* species (Koerber 1963, Krugman 1969, Rice 1985). It gains nourishment on the endosperm of the maturing seeds in warm weather months and on the needles during the cold months. *Leptoglossus occidentalis* feeds at the base of host conifer needles, probably ingesting sugars produced by over wintering trees.

However, there is no evidence that this activity is damaging. *Leptoglossus occidentalis* is also a pest in commercial plantations growing nursery seed stock (Schowalter and Sexton 1990).

*Leptoglossus occidentalis* was first recorded from Utah, California, Colorado and British Columbia by Heidemann (1910). Originally, it was confined to the western third of the United States and Canada. Gall (1992) presented strong evidence that the eastern range expansion during the last 70 years was mediated by humans. Adults are active fliers and can fly over 200 feet in a single flight. This aids dispersal once the insect is introduced to an area. The insect probably reached Connecticut in the early to mid-1980's. The first specimen of *L. occidentalis* collected in Connecticut was from a Douglas-fir on 27 December 1985 in Fairfield, Fairfield Co. Dr. R. J. Packauskas (then at the University of Connecticut) identified the insect in 1990. The spec-

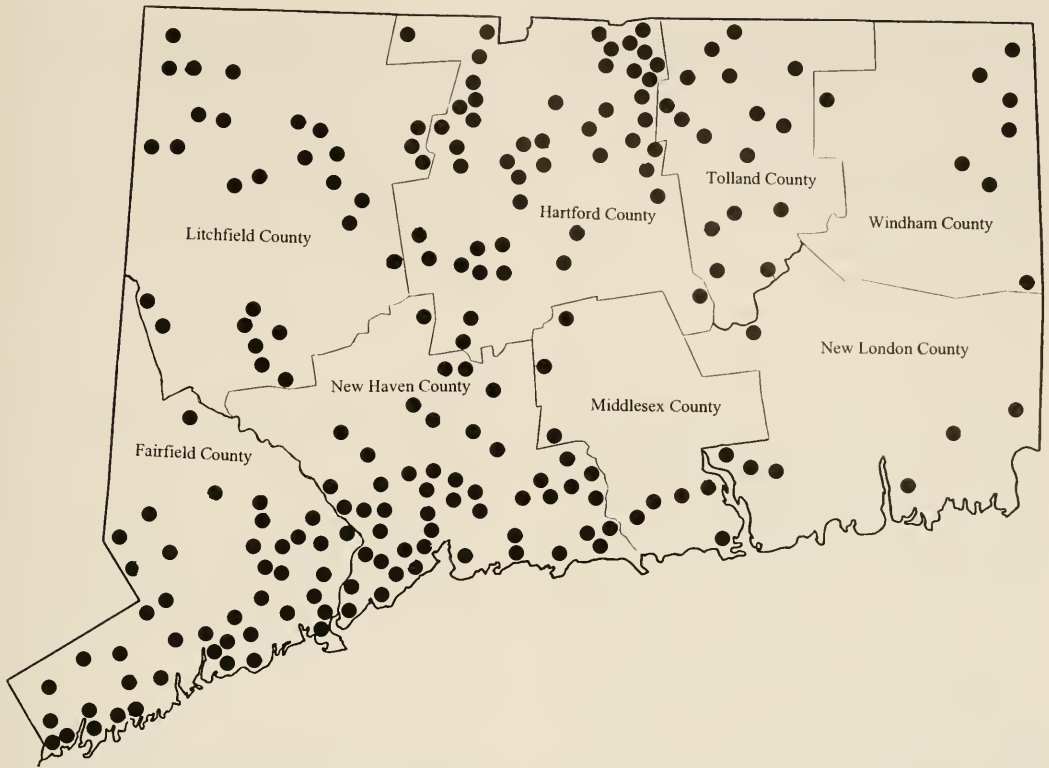


Fig. 1. Distribution of *Leptoglossus occidentalis* in Connecticut.

imen is in the insect collection at Yale University.

In 1996, the public information office at The Connecticut Agricultural Experiment Station (CAES) in New Haven began receiving calls about this insect from citizens across the state. In response, a survey of pest control operators, Christmas tree growers, state agencies, and citizens was conducted to determine the geographic distribution of *L. occidentalis* in Connecticut. The survey was facilitated by telephone interviews and questionnaires. Specimens of *L. occidentalis* were collected from all eight counties in Connecticut (Fig. 1). Most specimens were collected in urban areas in the southern part of the state. Additional adult specimens were collected from widely separated sites in Massachusetts, Rhode Island, New Hampshire, and Maine and were brought to CAES for identification. Dr. Richard Dearborn (personal communication)

collected the first adult from Kennebec City, Kennebec County, Maine, on 8 October 1994. In most instances, adults were collected from homes and other buildings and were considered a nuisance.

There are no previously known parasites or pathogens of *L. occidentalis*. During October 1997, two adult insects, each with an egg cemented to the dorsal surface of the head were collected. These insects were held in the laboratory, and, after death, brown puparia were found near each insect. From these, two adult females of *Trichopoda pennipes* (F.) (Diptera: Tachinidae) emerged 14 days later. Once the maggots matured, the host died, and the maggots exited through the anus of the host and pupated.

*Trichopoda pennipes*, a parasitoid of insect species of Pentatomidae Largidae, and Coreidae (Beard 1939, Arnaud 1973), is a conspicuous fly with bright dorsal yellow

stripes on the thorax and feather-like setae on the posterior hind tibia. *Trichopoda pennipes* has no official common name, although Bratley (1933) referred to it as the "feather-legged fly." Although *T. pennipes* usually laid its eggs on the head of *L. occidentalis*, eggs were sometimes deposited on the dorsal or ventral surface of the host's thorax. According to Beard (1939), the maggots burrowed into the head capsule of *Anasa tristis* (DeGeer) after hatching, and then attached to the tracheal system to feed.

In the present study, four adults of *L. occidentalis* had multiple *T. pennipes* eggs, but ten had single eggs. Of the 438 *L. occidentalis* collected during the winter of 1997–1998, five (1.5%) had eggs on them, while during the winter of 1998–1999, nine (16%) of 57 *L. occidentalis* had eggs on them. *Trichopoda pennipes* may contribute to some biological control of *L. occidentalis*, especially in nursery seed groves in the western United States and Canada. *Leptoglossus occidentalis* and *T. pennipes* are widely distributed in the United States with the geographic range of *L. occidentalis* continuing to expand. Specimens of *T. pennipes* and *L. occidentalis* from this study are in the Connecticut Agricultural Experiment Station insect collection.

#### ACKNOWLEDGMENTS

I thank the countless members of the general public, pest control operators, Christmas tree growers, and state agencies that helped me gather information about *L. occidentalis* in Connecticut and neighboring states. I especially thank Patty Carr O'Shea, Mr. and Mrs. Louis Bernardini, and Barbara Listro for supplying me with many live specimens.

Other scientists, scholars, and private citizens I thank for their generous assistance are Dr. Alan Tomlin, Dr. William Krinsky, Dr. Leland Humble, Dr. Richard Dearborn, Dr. Richard Packauskas, Dr. Steven Katovich, Ms. Sarah Bates, Dr. John Bordon, Mr. and Mrs. Comboni, Dr. Wayne Gall, Dr.

Andy Hamilton, Mr. Jeff Fengler, Dr. Ken Harrison, Dr. Ronald Weseloh, Dr. Louis Magnarelli, Dr. Sharon Douglas, Dr. Chris Maier, Dr. Alan Wheeler, Mr. Kenneth A. Welch, Mr. Jay Donahue, Dr. John Anderson, Dr. Paul Johnson, Dr. Steven Jacob, Dr. Vernon Nelson, Dr. Richard Zack, Dr. John Bouseman, Dr. Neil McHale, and Dr. Steve Burian.

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